

Amendments to the Claims

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

Claims 1-3 (Canceled)

4. (Currently Amended) A liquid crystal display device, comprising:

a first substrate and a second substrate at least one of which is transparent;

a liquid crystal layer interposed between the first and second substrates, the layer being made of a nematic liquid crystal material having a positive dielectric anisotropy;

a first electrode and a second electrode provided on the first and second substrates, respectively, for applying an electric field substantially vertical to the first and second substrates across the liquid crystal layer;

a first polarizing plate and a second polarizing plate each provided on an outer side of respective one of the first and second substrates, the first and second polarizing plates being arranged in a crossed Nicols arrangement; and

a first phase difference compensator provided between the first polarizing plate and the first substrate, and a second phase difference compensator provided between the second polarizing plate and the second substrate, wherein the phase-delay axes of the first and second phase difference compensators are parallel to each other and perpendicular to a phase-delay axis of the liquid crystal layer,

a third phase difference compensator having a biaxial refractive index anisotropy, being provided between the first phase difference compensator and the first polarizing plate, the third phase difference compensator including a first phase delay axis which is arranged to be parallel to a direction normal to a surface of the substrate, and a refractive index anisotropy in a plane

parallel to the surface of the substrate, the refractive index anisotropy being perpendicular to a polarization axis of one of the first and second polarization axes;

wherein the liquid crystal layer in each pixel region in the absence of an applied voltage includes at least a first domain and a second domain in which liquid crystal molecules are oriented in different orientations, and the phase difference compensators in the absence of an applied voltage are in a condition that the orientation states of the first and second domains are substantially the same with each other, and are adopted to compensate the refractive index anisotropy of the liquid crystal molecules, being substantially oriented in parallel with respect to the surfaces of the first and second substrates and to cause the liquid crystal molecules in the presence of an applied voltage to rise in the opposite direction with each other.

5. (Withdrawn) A liquid crystal display device according to claim 4, wherein:

the first and second substrates are both transparent; and

the phase difference compensator comprises a first phase difference compensator provided between the first substrate and the first polarizing plate and a second phase difference compensator provided between the second substrate and the second polarizing plate.

6. (Withdrawn) A liquid crystal display device according to claim 5, wherein:

the first and second phase difference compensators each have a positive refractive index anisotropy; and

phase-delay axes of the first and second phase difference compensators are substantially parallel to each other and substantially perpendicular to a phase-delay axis of the liquid crystal layer in the absence of an applied voltage.

7. (Withdrawn) A liquid crystal display device according to claim 6, wherein:
a third phase difference compensator is further provided between the first phase difference compensator and the first polarizing plate;
the third phase difference compensator has a positive refractive index anisotropy; and
a phase-delay axis of the third phase difference compensator is substantially perpendicular to the first and second substrates.

8. (Withdrawn) A liquid crystal display device according to claim 7, wherein:
a fourth phase difference compensator is further provided between the second phase difference compensator and the second polarizing plate;
the fourth phase difference compensator has a positive refractive index anisotropy; and
a phase-delay axis of the fourth phase difference compensator is substantially perpendicular to the first and second substrates.

9. (Previously Presented) A liquid crystal display device according to claim 4, wherein:
a fourth phase difference compensator is provided between the second phase difference compensator and the second polarizing plate;
the fourth phase difference compensator has a positive refractive index anisotropy and a phase-delay axis of the fourth phase difference compensator is substantially perpendicular to the first and second substrates;
a fifth phase difference compensator is provided between the first phase difference compensator and the third phase difference compensator;
a sixth phase difference compensator is provided between the second phase difference compensator and the fourth phase difference compensator;

the fifth and sixth phase difference compensators each have a positive refractive index anisotropy;

a phase-delay axis of the fifth phase difference compensator is substantially perpendicular to a polarization axis of the first polarizing plate; and

a phase-delay axis of the sixth phase difference compensator is substantially perpendicular to a polarization axis of the second polarizing plate.

10. (Original) A liquid crystal display device according to claim 4, wherein:

directors of the liquid crystal molecules in the first and second domains in the middle of the liquid crystal layer along a thickness direction thereof rise in respective directions which are different from each other by about 180° ; and

the directions are at about 45° with respect to the polarization axis of each of the first and second polarizing plates.

11. (Original) A liquid crystal display device according to claim 4, wherein the liquid crystal molecules in the first and second domains are in a horizontal orientation.

12. (Withdrawn) A liquid crystal display device according to claim 4, wherein the liquid crystal molecules in the first and second domains are in a twist orientation.

13. (Original) A liquid crystal display device according to claim 11, wherein pre-tilt angles of the liquid crystal molecules on the first and second substrates in the first domain are different from those in the second domain.

14. (Withdrawn) A liquid crystal display device according to claim 12, wherein pre-tilt angles of the liquid crystal molecules on the first and second substrates in the first domain are different from those in the second domain.

15. (Withdrawn) A liquid crystal display device according to claim 4, wherein the liquid crystal layer in each pixel region includes a plurality of the first domains and a plurality of the second domains, the number of the first domains being the same as the number of the second domains.

16. (Currently Amended) A liquid crystal display device according to claim 4, wherein a total area of the first domain is equal to that of the second domain.

17. (New) A liquid crystal display device according to claim 4, wherein the third phase difference compensator has a biaxial refractive index anisotropy.